

10/521781

- VII. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-**polybutadiene** produced in each example are summarized in Table VII.
- DETD In Examples 46-52, the procedure in Example 1 was repeated except that iron(III) acetylacetonate was substituted for iron(II) 2-ethylhexanoate, and triethylaluminum was substituted for triisobutylaluminum, having the catalyst ratio varied as shown in Table VIII. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-**polybutadiene** produced in each example are summarized in Table VIII. ¹H and ¹³C NMR analysis of the polymer produced in Example 48 indicated a 1,2-linkage content of 84.6% and a syndiotacticity of 74.5%.
- DETD In Examples 53-58, the procedure in Example 1 was repeated except that iron(III) acetylacetonate was substituted for iron(II) 2-ethylhexanoate, diisopentyl hydrogen phosphite was substituted for bis(2-ethylhexyl) hydrogen phosphite, and triethylaluminum was substituted for triisobutylaluminum, having the catalyst ratio varied as shown in Table IX. The monomer charge, the amounts of catalyst components, and the properties of the resultant syndiotactic 1,2-**polybutadiene** produced in each example are summarized in Table IX.
- DETD Inside a glovebox operated under a nitrogen atmosphere, 32.4 mg (0.20 mmol) of anhydrous iron(III) chloride powder was charged to into an oven-dried 1-liter glass bottle. The bottle was capped with a self-sealing rubber liner and a perforated metal cap and then removed from the glovebox. The bottle was charged with 132 g of hexanes and 368 g of a 1,3-**butadiene**/hexanes blend containing 27.2% by weight of 1,3-**butadiene**, followed by 0.80 mmol of bis(2-ethylhexyl) hydrogen phosphite and 2.80 mmol of triisobutylaluminum. The bottle was tumbled for 4 hours in a water bath maintained at 50° C. Workup of the polymerization mixture in a manner similar to that described in Example 1 gave 37.2 g (37% yield) of the polymer. As measured by DSC, the polymer had a melting temperature of 168° C. As determined by GPC, the polymer had a weight average molecular weight (M_w) of 871,000, a number average molecular weight (M_n) of 329,000, and a polydispersity index (M_w/M_n) of 2.6.
- CLM What is claimed is:
8. The catalyst composition of claim 3, wherein (b) and (c) are combined in the presence of 1,3-**butadiene** monomer.
9. A catalyst composition for homopolymerizing conjugated dienes, the catalyst composition is formed by a process comprising the step of combining: (a) an iron-containing compound; (b) a dihydrocarbyl hydrogen phosphite; and (c) an organoaluminum compound; wherein at least two of the components (a), (b), and (c) are combined in the presence of conjugated diene monomer, and wherein the molar ratio of the **organo aluminum** compound to the iron-containing compound is equal to or greater than 12:1.

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FILE 'USPATFULL, USPAT2, CAPLUS, JAPIO' ENTERED AT 20:16:51 ON 05 SEP 2005

L1 330 SEA ABB=ON PLU=ON COBALT### AND (ISOBUTYL OR ISOPROPYL OR
CYCLOHEXYL OR CYCLOPENTYL) (2A) (PHOSPHINE OR PHOSPHITE)
L2 145051 SEA ABB=ON PLU=ON L1 AND BUTADIENE OR DIENE
L3 305330 SEA ABB=ON PLU=ON BUTADIENE# OR POLYBUTADIENE#
L4 89 SEA ABB=ON PLU=ON L1 AND L3
L5 5 SEA ABB=ON PLU=ON L4 AND (ORGAN### OR ALKYL) (1A) ALUMINUM
D L5 1-5 IBIB ABS

D L5 5 HIT

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FILE USPATFULL

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 1 Sep 2005 (20050901/PD)

FILE LAST UPDATED: 1 Sep 2005 (20050901/ED)

HIGHEST GRANTED PATENT NUMBER: US6938271

HIGHEST APPLICATION PUBLICATION NUMBER: US2005193458

CA INDEXING IS CURRENT THROUGH 1 Sep 2005 (20050901/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Sep 2005 (20050901/PD)

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FILE USPAT2

FILE COVERS 2001 TO PUBLICATION DATE: 1 Sep 2005 (20050901/PD)

FILE LAST UPDATED: 1 Sep 2005 (20050901/ED)

HIGHEST GRANTED PATENT NUMBER: US2005139861

HIGHEST APPLICATION PUBLICATION NUMBER: US2005193458

CA INDEXING IS CURRENT THROUGH 1 Sep 2005 (20050901/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 1 Sep 2005 (20050901/PD)

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FILE LAST UPDATED: 5 SEP 2005 <20050905/UP>
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L2 145051 S L1 AND BUTADIENE OR DIENE
L3 305330 S BUTADIENE# OR POLYBUTADIENE#
L4 89 S L1 AND L3
L5 5 S L4 AND (ORGAN### OR ALKYL) (1A)ALUMINUM

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